

Calculation Methods for Grains/Breads Servings for Grades K-12 in the Afterschool Snack Program

This guidance applies to the meal pattern for grades K-12 in the U.S. Department of Agriculture’s (USDA) Afterschool Snack Program (ASP) of the National School Lunch Program (NSLP). The crediting requirements for the grains component are different for the other school nutrition programs. For a comparison of these requirements, refer to the CSDE’s resource, [Comparison of Meal Pattern Requirements for the Grains Component in School Nutrition Programs](#).

For additional guidance on the ASP meal pattern and crediting requirements for the grains/breads component, visit the “[Meal Patterns for the ASP](#)” and “[Grains/Breads Component for Grades K-12 in the ASP](#)” sections of the Connecticut State Department of Education’s (CSDE) ASP webpage.



Overview of Crediting Requirements for Grains

To credit as the grains/breads component in the ASP meal pattern for grades K-12, grain products and recipes must be made with creditable grains. Creditable grains include whole grains, enriched grains, bran, and germ. **Note:** Bran and germ do not credit in the NSLP and School Breakfast Program (SBP) meal patterns for grades K-12.

Creditable grain foods include products and recipes that are enriched, whole grain, or whole-grain rich (WGR). Cooked and ready-to-eat (RTE) breakfast cereals must be whole grain, enriched, or fortified. For guidance on identifying creditable grains, refer to the CSDE’s resources, [Crediting Whole Grains in the NSLP and SBP](#), [Crediting Enriched Grains in the NSLP and SBP](#), and [Crediting Breakfast Cereals for Grades K-12 in the NSLP and SBP](#).

Overview of Servings

The required quantities for the grains/breads component are in servings. The USDA allows two methods for determining the grains/breads servings of creditable grain products and recipes. Method 1 (weight or volume) is used for commercial grain products and may also be used for standardized recipes that indicate the weight of the prepared (cooked) serving. Method 2 (creditable grains) is used for standardized recipes and may also be used for commercial grain products that have a product formulation statement (PFS) indicating the weight of creditable grains per serving.

School food authorities (SFAs) may use either method but must document how the crediting information is determined for each grain product and recipe (refer to “[Choosing a Calculation Method](#)” in this document). For some commercial products, method 2 is required (refer to “[When Method 2 is Required for Commercial Products](#)” in this document).

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SFAs are not required to use these methods for commercial products with a Child Nutrition (CN) label. CN-labeled products credit based on the stated crediting information for grains/breads servings. CN labels are available only for main dish entrees that contribute to the meat/meat alternates component, such as pizza, breaded chicken nuggets, and cheese ravioli. However, CN labeled foods usually indicate the contribution of grains, vegetables, and fruits that are part of these products. For more information, refer to the CSDE's resource, [Child Nutrition \(CN\) Labeling Program](#).

Method 1: Weights or Volumes (USDA's Exhibit A Chart)

Method 1 uses the USDA's chart, [Exhibit A: Grain Requirements for Child Nutrition Programs](#) (Exhibit A) to determine the required weight (groups A-G) or volume (groups H-I) for the grain group where the product belongs. The required amounts for the grains component are not the same for all Child Nutrition Programs. The CSDE's resource, [Servings for Grains/Breads for Grades K-12 in the ASP](#), lists the Exhibit A grain servings that apply to the ASP meal patterns for grades K-12.

The amount of a creditable grain food that provides one serving varies because different types of foods contain different amounts of creditable grains. For example, to credit as one serving of the grains/breads component in the ASP meal pattern for grades K-12, a roll must weigh 25 grams (0.8 ounce), a corn muffin must weigh 31 grams (1.1 ounces), and a blueberry muffin must weigh 50 grams (1.8 ounces). The minimum amount that credits toward the grains component is $\frac{1}{4}$ serving.

- **Groups A-G** include baked goods, such as crackers, animal and graham crackers, breads, rolls, taco shells, muffins, waffles, pancakes, and grain-based desserts. The amount of a food that provides one serving ranges from 20 grams (0.7 ounce) for foods in group A to 115 grams (4 ounces) for foods in group G.
- **Group H** includes cereal grains, such as pasta, cooked breakfast cereals, and other cereal grains, e.g., amaranth, barley, buckwheat, cornmeal, corn grits, farina, kasha, millet, oats, quinoa, wheat berries, and rolled wheat. These foods require $\frac{1}{2}$ cup cooked or 25 grams dry to credit as one serving of the grains/breads component. **Note:** Cereal grains typically credit based on the **cooked** serving, but menu planners may choose to credit cereal grains using the dry uncooked weight. For guidance on crediting cooked breakfast cereals, refer to the CSDE's resource, [Crediting Breakfast Cereals for Grades K-12 in the NSLP and SBP](#).

Dry cereal grains used as an ingredient in a recipe (such as rolled oats in bread) require 14.75 grams of creditable grains to credit as one serving of the grains/breads component.

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- **Group I** includes RTE cold breakfast cereals. These foods require $\frac{3}{4}$ cup or 1 ounce (whichever is less) to credit as one serving of the grains/breads component. For guidance on crediting RTE breakfast cereals, refer to the CSDE's resource, [Crediting Breakfast Cereals for Grades K-12 in the NSLP and SBP](#).

Method 1 applies to all creditable commercial grain products. This method may also be used for standardized recipes if the SFA knows the weight of the prepared (cooked) serving. For more information, refer to “[Using Method 1 \(USDA's Exhibit A chart\)](#)” in this document.

Using Method 1 for commercial products

The product's Nutrition Facts label or PFS must indicate the weight (ounces or grams) of the manufacturer's serving. The USDA's online [Exhibit A Grains Tool](#) helps menu planners determine the grains/breads servings of commercial grain products. For more information, watch the USDA's webinars, [Exhibit A Grains Tool to the Rescue](#) and [How to Maximize the Exhibit A Grains Tool](#).

Note: For some commercial grain products, SFAs must use method 2 to determine the grains/breads servings. For more information, refer to “[When Method 2 is Required for Commercial Products](#)” in this document.

Using method 1 for foods made from scratch

SFAs must have standardized recipes on file that indicate the weight of the prepared (cooked) serving of foods made from scratch. Many standardized recipes do not list the serving weight. If the standardized recipe does not provide this information, SFAs could determine the average weight per serving by weighing several servings of the recipe. For more information, refer to the CSDE's [Yield Study Data Form for Child Nutrition Programs](#).



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Method 2: Creditable Grains

Method 2 determines the grains/breads servings for creditable grain products and standardized recipes by calculating the total weight (grams) of creditable grains per serving. The grams of creditable grains are obtained from the commercial product's PFS or calculated from the grain quantities in the SFA's recipe. To credit as one serving of the grains/breads component, foods in groups A-G of the USDA's Exhibit A chart must contain **14.75 grams** of creditable grains and foods in groups H-I must contain **25 grams** of creditable grains.



Using method 2 for commercial products

SFAs must obtain a PFS from the manufacturer that documents the weight of the creditable grains per serving. This information cannot be determined from the product's Nutrition Facts label or packaging.

For information on PFS forms, refer to the CSDE's resources, [Product Formulation Statements](#) and [Accepting Processed Product Documentation in the NSLP and SBP](#); and the USDA's handouts, [Product Formulation Statement for Documenting Grains/Breads Servings in the Child and Adult Care Food Program](#), [Summer Food Service Program](#), and [NSLP Afterschool Snacks](#) and [Tips for Evaluating a Manufacturer's Product Formulation Statement](#). For additional guidance on documentation for commercial products, visit the ["Crediting Commercial Processed Products in School Nutrition Programs"](#) section of the CSDE's [Crediting Foods in School Nutrition Programs](#) webpage.

Using method 2 for foods made from scratch

Foods made from scratch must have a standardized recipe that indicates the weight of each grain ingredient. SFAs must determine the grams of creditable grains per serving from the weight of each grain ingredient listed in the standardized recipe. For assistance with recipe calculations, such as converting fractions to decimals, refer to the Institute of Child Nutrition's (ICN) [Basics at a Glance Portion Control Poster](#) and the decimal equivalents of fractions in the ["Introduction"](#) section of the USDA's FBG.

Menu planners can use the FBG's online [Recipe Analysis Workbook](#) to search for ingredients, develop a standardized recipe, and determine the recipe's meal pattern contribution per serving. To access this tool, users must create a free account on the USDA's FBG website. For additional guidance on determining the grains/breads servings of recipes, visit the ["Serving Size for Grains/Breads"](#) section of the CSDE's [Afterschool Snack Program \(ASP\)](#) webpage.

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Note: If the recipe lists grain ingredients by volume (e.g., cups and quarts) instead of weight (pound and ounces), each measurement must be converted to the equivalent weight (grams). For more information, refer to “[Method 2 calculation for recipes listing the volume of grain ingredients](#)” in this document.

When Method 2 is Required for Commercial Products

SFAs may need to obtain additional information to determine the crediting information for some commercial grain products. A PFS is required for commercial products when any of the following situations apply:

- a creditable grain is not the first ingredient, but the product contains more than one creditable grain;
- a combination food that contains a grain portion is not CN labeled;
- the manufacturer claims that the product’s serving size is less than the required weight or volume in the USDA’s Exhibit A chart; or
- the product is not listed in the USDA’s Exhibit A chart.

The requirements for each situation are summarized below. The manufacturer’s PFS must indicate the weight (grams) of each creditable grain per serving and demonstrate how the product provides that amount according to the FBG or USDA’s regulations, guidance, or policies. If the manufacturer will not supply a PFS, or the PFS does not provide the appropriate documentation, the product cannot credit as the grains/breads component in the ASP meal pattern for grades K-12.

SFAs must verify the accuracy of the PFS **before** including the product in reimbursable meals and snacks, and must maintain all crediting documentation on file. The CSDE will review this information during the Administrative Review of the school nutrition programs. For more information, refer to the USDA’s document, [Tips for Evaluating a Manufacturer’s Product Formulation Statement](#).

Situation 1: Creditable grain is not the first ingredient, but the product contains more than one whole grain

A PFS is required when a creditable grain is not the first ingredient (excluding water), but the ingredients statement for the commercial grain product (or the *grain portion* of a combination food) contains more than one creditable grain. For grain products (such as breads, rolls, muffins, and waffles), the PFS must document that the combined weight of all creditable grains is the greatest ingredient by weight. For combination foods (such as pizza, lasagna, and breaded chicken), the PFS

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must document that the combined weight of all creditable grains in the *grain portion* is the greatest ingredient by weight in the *grain portion*.

For example, the yellow corn flour in the product below is not a whole grain. For this product to credit in the ASP meal pattern, the PFS must indicate that the combined weight of the creditable grains (whole-wheat flour, rolled oats, and oat bran) is more than the weight of the yellow corn flour (noncreditable grain).

- Ingredients: *Yellow corn flour*, *whole-wheat flour*, sugar, *rolled oats*, wheat gluten. Contains 2% or less of each of the following: honey, salt, *oat bran*, yeast, molasses.

Situation 2: Combination food that contains a grain portion is not CN labeled

A PFS is required when a commercial combination food that contains a grain portion is not CN labeled. Examples include pizza crust in pizza, noodles in lasagna, and baked chicken coated with breadcrumbs or crushed cereal flakes. The PFS must document that creditable grains are the greatest ingredient by weight in the grain portion.

Situation 3: Manufacturer claims serving size is less than USDA's Exhibit A chart

A PFS is required when a manufacturer claims that a commercial grain product can provide the required creditable grains using a serving that is less than the minimum weight or volume listed in the USDA's Exhibit A chart (refer to the CSDE's resource, [Servings for Grains/Breads for Grades K-12 in the ASP](#)). An example is a manufacturer that claims a ¾-ounce whole-grain bagel credits as one serving of the grains/breads component. The product's PFS must indicate how the manufacturer obtained this crediting information based on the FBG or the USDA's regulations, guidance, or policies.

Situation 4: Product is not listed in USDA's Exhibit A chart

A PFS is required when a commercial grain product is not listed in any of the nine groups of the USDA's Exhibit A chart (refer to the CSDE's resource, [Servings for Grains/Breads for Grades K-12 in the ASP](#)). The PFS must indicate the weight of each creditable grain and how the manufacturer obtained the product's crediting information based on the USDA's regulations, guidance, or policies.

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Choosing a Calculation Method

SFAs may choose to use either crediting method but must document which method is used for each product. For some commercial grain products, methods 1 and 2 may result in a different crediting contribution. For example, a 1-ounce whole-grain bagel might credit as one serving of the grains/breads component using method 1 (USDA's Exhibit A chart), but might credit as 1½ servings using method 2 (creditable grains).

SFAs should use the same calculation method each time the same product is on the menu. For example, if method 2 is used to determine the crediting of a whole-grain bagel, that same bagel should always be credited using method 2. The CSDE strongly recommends choosing one calculation method for consistent crediting. This simplifies menu planning and assists SFAs with documenting compliance for the grains/breads component.

Sample Calculations for Commercial Products

This section demonstrates how to calculate the grains/breads servings of commercial grain products using either the appropriate weight (groups A-G) or volume (groups H-I) in the USDA's Exhibit A chart (method 1), or the weight of creditable grains per serving (method 2). SFAs may also use the USDA's [Exhibit A Grains Tool](#) to automatically calculate this information (refer to "[Using Method 1 for commercial products](#)" in this document).

Sample Calculations for Commercial Products in Groups A-G

Table 1 shows a sample calculation using method 1 for a commercial product in group C, whole-wheat pancakes. Table 2 shows a sample calculation for this same product using method 2. These examples show how each method can result in a different crediting contribution for the same product. For some products, methods 1 and 2 result in the same crediting contribution. SFAs may use either method but must document how the crediting information was determined (refer to "[Choosing a Calculation Method](#)" in this document).



To determine the meal pattern contribution of a commercial grain product using method 1, menu planners must use the **weight** (ounces or grams) of one serving from the product's Nutrition Facts label or PFS. If the product lists the serving size in ounces and grams, menu planners may choose to use either one. To convert ounces to grams, multiply ounces by 28.35.

Calculation Methods for Grains/Breads Servings for Grades K-12 in the ASP

Table 1. Using method 1 (USDA's Exhibit A chart) to calculate the grains/breads servings for commercial products in groups A-G

Mini Whole-Wheat Pancakes

Manufacturer's serving size:

5 pancakes (1.75 ounces)

Group C (USDA's Exhibit A chart):

1 serving = 31 grams or 1.1 ounces

Ingredients: Water, whole-wheat flour, enriched flour (wheat flour, niacin, ferrous sulfate, thiamin mononitrate, riboflavin, folic acid), sugar, canola oil. Contains 2% or less of: leavening (baking soda, sodium aluminum phosphate, monocalcium phosphate), eggs, salt, buttermilk.

1. List the weight of the **manufacturer's serving** from the product's Nutrition Facts label or PFS (1 ounce = 28.35 grams).

A

1.75 ounces

2. List the required weight for **one serving** for the product's group (A-G) in the USDA's Exhibit A chart. ¹

B

1.1 ounces

3. Determine the **grains/breads servings** in one serving of the product: Divide A by B.

C

1.59 grains/breads servings
per manufacturer's
serving

4. Round **down** the number in C to the **nearest ¼ serving**. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.

D

1.5 grains/breads servings
per manufacturer's
serving (rounded)

Summary of crediting information: The manufacturer's serving size (5 mini-pancakes) credits as **1½ servings** of the grains/breads component.

¹ Calculations use the weight for the appropriate group in the USDA's Exhibit A chart (refer to the CSDE's resource, [Servings for Grains/Breads for Grades K-12 in the ASP](#)). Pancakes are in group C, which requires 31 grams (1.2 ounces) to credit as one serving of the grains/breads component.

Calculation Methods for Grains/Breads Servings for Grades K-12 in the ASP

Table 2. Using method 2 (creditable grains) to calculate the grains/breads servings for commercial products in groups A-G

Mini Whole-Wheat Pancakes

Manufacturer's serving size:
5 pancakes (1.75 ounces)

Creditable grains per serving (from product's PFS):

Whole-wheat flour: 16 grams

Enriched flour: 14 grams

Ingredients: Water, whole-wheat flour, enriched flour (wheat flour, niacin, ferrous sulfate, thiamin mononitrate, riboflavin, folic acid), sugar, canola oil. Contains 2% or less of: leavening (baking soda, sodium aluminum phosphate, monocalcium phosphate), eggs, salt, buttermilk.

1. List the **combined weight (grams)** of creditable in one serving from the product's PFS (1 ounce = 28.35 grams). ¹

14.75 grams of whole-wheat flour +
14 grams of enriched flour =
30 grams of creditable grains

A	30 grams
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2. Determine the **grains/breads servings in one serving** of the product: Divide A by 14.75 (1 grains/breads serving for groups A-G = **14.75 grams** of creditable grains).

B	2 grains/breads servings per manufacturer's serving
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3. Round **down** the number in B to the **nearest ¼ serving**. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.

C	2 grains/breads servings per manufacturer's serving (rounded)
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Summary of crediting information: The manufacturer's serving size (five mini-pancakes) credits as **2 servings** of the grains/breads component.

¹ To credit a product using method 2, SFAs must obtain a manufacturer's PFS stating the weight of all creditable grains.

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Sample Calculations for Commercial Products in Group H

Table 3 shows a sample calculation using method 1 to determine the grains/breads servings for a commercial whole-grain pasta product in group H. Table 4 shows a sample calculation for this same product using method 2. Each method results in the same crediting contribution for this product. The ½-cup serving of pasta credits as one serving of the grains/breads component for grades K-12.

For some products, each method results in a different crediting contribution. SFAs may use either method but must document how the crediting information was determined (refer to “[Choosing a Calculation Method](#)”).

Cereal grains in group H typically credit based on the **cooked** serving. i.e., ½ cup of cooked cereal credits as one serving of the grains/breads component. However, the menu planner may choose to calculate the product’s grains/breads servings based on the **dry uncooked weight**, i.e., 1 ounce of dry cereal grains credits as one grains/breads serving. The menu planner must determine the weight (ounces or grams) of one serving from the commercial product’s Nutrition Facts label or the manufacturer’s PFS. If the product lists ounces and grams, the menu planner may choose to use either one.



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Table 3. Using method 1 (USDA's Exhibit A chart) to calculate the grains/breads servings for commercial products in group H

Whole-grain Pasta

Manufacturer's serving size:

32 grams dry (½ cup cooked)

Group H (USDA's Exhibit A chart):

1 serving = ½ cup cooked or 25 grams dry

Ingredients: Whole-grain durum wheat flour, enriched wheat flour.

1. List the weight of the **manufacturer's serving** from the product's Nutrition Facts label or PFS (1 ounce = 28.35 grams).

A	32	grams
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2. List the required uncooked (dry) weight for **1 grains/breads serving** for the product's group in the USDA's Exhibit A chart (group H).¹

B	25	grams
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3. Determine the **grains/breads servings** in one serving of the product: Divide A by B.

C	1.28	grains/breads servings per manufacturer's serving
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4. Round **down** the number in C to the nearest ¼ **serving**. For example, 1.49 and 1.27 round down to 1.25, and 1.24 rounds down to 1.

D	1¼	grains/breads servings per manufacturer's serving (rounded)
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Summary of crediting information: The manufacturer's serving size (32 grams dry) credits as **1¼ servings** of the grains/breads component.

¹ Calculations use the weight for the appropriate grain group in the USDA's Exhibit A chart (refer to the CSDE's resource, *Servings for Grains/ Breads for Grades K-12 in the ASP*). Pasta is in group H, which requires 25 grams dry to credit as one serving of the grains/breads component.

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Table 4. Using method 2 (creditable grains) to calculate the grains/breads servings for commercial products in group H

Whole-grain Pasta

Manufacturer's serving size:

32 grams dry (½ cup cooked)

Group H (USDA's Exhibit A chart):

1 serving = ½ cup cooked or 25 grams dry

Creditable grains per serving (from product's PFS):

Whole-wheat flour: 14 grams

Enriched flour: 12 grams

Ingredients: Whole-grain durum wheat flour, enriched wheat flour.

1. List the **combined weight (grams)** of whole and enriched grains in one serving from the product's PFS (1 ounce = 28.35 grams). ¹

15 grams of whole-wheat flour +
14 grams of enriched flour =
29 grams of creditable grains

A **29** grams

2. Determine the **grains/breads servings** in one serving of the product: Divide A by 25 (1 grains/breads serving for group H = **25 grams** of creditable grains).

B **1.16** grains/breads servings
per manufacturer's
serving

3. Round **down** the number in B to the **nearest ¼ serving**. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.

C **1.0** grains/breads
servings per
manufacturer's
serving (rounded)

Summary of crediting information: The manufacturer's serving size (½ cup cooked) credits as **1 serving** of the grains/breads component.

¹ To credit a product using method 2, SFAs must obtain a manufacturer's PFS stating the weight of all creditable grains.

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Sample Calculations for Foods Made from Scratch

SFAs must have standardized recipes on file to document the meal pattern contribution of grain foods made from scratch, such as breads, rolls, muffins, pizza dough, and pancakes. This section demonstrates how to calculate the grains/breads servings of standardized recipes using either the appropriate weight (groups A-G) or volume (groups H-I) in the USDA's Exhibit A chart (method 1), or the weight of creditable grains per serving (method 2). SFAs may also use the USDA's [Recipe Analysis Workbook](#) to automatically calculate this information (refer to “[Using method 2 for foods made from scratch](#)” in this document).

SFAs do not need to calculate grains/breads servings for grain foods prepared from the USDA's recipes for Child Nutrition Programs. These standardized recipes specify the meal pattern crediting information per serving. For links to the USDA's recipes, visit the Institute of Child Nutrition's (ICN) [Child Nutrition Recipe Box](#) and the “[Recipes](#)” section of the CSDE's [Menu Planning for Child Nutrition Programs](#) webpage. For information on standardized recipes, visit the “[Crediting Foods Prepared on Site in Preschool Menus](#)” section of the CSDE's [Meal Patterns for Preschoolers in School Nutrition Programs](#) webpage.

Method 2 calculation for recipes listing the weight of grain ingredients

Table 5 shows how to use method 2 to calculate the grains/breads servings for a standardized recipe that lists the weight of the grain ingredients. Foods in groups A-G must contain **14.75 grams** of creditable grains per recipe serving to credit as one serving of the grains/breads component.



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Table 5. Using method 2 (creditable grains) to calculate the grains/breads servings for standardized recipes listing the weight of grain ingredients

WGR standardized recipe for multi-grain bread	
Yield: 100 servings	Grain ingredients:
Serving size: 1 piece	Whole-wheat flour: 8 ounces (0.5 pound)
	Rolled oats: 1 pound 2 ounces (1.125 pounds) ²
	Enriched flour: 1 pound
	Enriched cornmeal: 8 ounces (0.5 pound) ²



1. Determine the total weight (pounds) of all creditable grains in the recipe (16 ounces = 1 pound). Convert fractions to decimals, e.g., 1¾ pounds equals 1.75 pounds. 1.625 pounds of whole grains (whole-wheat flour and rolled oats) + 1.5 pounds of enriched grains (enriched flour and enriched cornmeal) = 3.125 pounds of creditable grains	A	3.125	pounds of creditable grains
2. Determine the total grams of creditable grains in the recipe: Multiply A by 453.6 (1 pound = 453.6 grams).	B	1417.5	grams of creditable grains
3. List the number of servings in the recipe.	C	100	servings per recipe
4. Determine the grams of creditable grains per recipe serving: Divide B by C.	D	14.175	grams of creditable grains per recipe serving
5. Determine the grains/breads servings per recipe serving: Divide D by 14.75 (1 grains/breads serving = 14.75 grams of creditable grains). ¹	E	0.96	grains/breads servings
6. Round down the number in E to the nearest ¼ serving . For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.	F	0.75	grains/breads servings (rounded)

Summary of crediting information: The recipe's serving (one piece) credits as ¾ **serving** of the grains/breads component.

¹ Dry cereal grains used as an ingredient in a recipe (such as rolled oats and cornmeal) credit the same as groups A-G. They require 14.75 grams of creditable grains to credit as one serving of the grains/bread component.

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Method 2 calculation for recipes listing the volume of grain ingredients

If the recipe lists grain ingredients only by volume (e.g., cups and quarts), the SFA must first convert each measurement to the equivalent **weight (grams)**. Any of the methods below may be used for this calculation.

- **Nutrition Facts label:** Use the manufacturer's serving size information on the Nutrition Facts label for the grain ingredient, such as whole-wheat flour, enriched flour, or whole-grain cornmeal. Multiply the weight (grams) of the manufacturer's serving by 4 to get the grams per cup, then multiply the grams per cup by the number of cups used in the recipe.



Nutrition Facts	
Serving Size	1/4 cup (32g)
Amount Per Serving	
Calories	110

For example, a recipe contains 2 cups of whole-wheat flour and 2 cups of enriched flour.

- Whole wheat flour: The Nutrition Facts label for the whole-wheat flour states that 1/4 cup weighs 32 grams, which equals 128 grams per cup. Multiply the grams per cup (128 grams) by the number of cups used in the recipe (2 cups) to determine the total weight of the grain ingredient in the recipe (256 grams).
- Enriched flour: The Nutrition Facts label for the enriched flour states that 1/4 cup weighs 30 grams, which equals 120 grams per cup. Multiply the weight per cup (120 grams) by the amount of enriched flour used in the recipe (2 cups) to determine the weight of the enriched flour used in the recipe (240 grams).

This recipe is WGR because the whole-wheat flour (256 grams) weighs more than the enriched flour (240 grams).

- **Nutrient database:** Search the USDA's [FoodData Central](#) nutrient database for grain ingredients, such as whole-wheat flour or yellow cornmeal. Enter "1" in the data field for the cup measurement, and the database will provide the weight of 1 cup of that ingredient.
- **Volume equivalent chart:** Use volume equivalent charts that list the weight of 1 cup of grain ingredients. Table 6 shows the weight per cup for some commonly used grain ingredients.
- **Yield study:** Determine the average weight of 1 cup of the grain ingredient by measuring and weighing several samples. For more information, refer to the CSDE's [Yield Study Form for Child Nutrition Programs](#).

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Table 7 shows how to use method 2 to calculate the grains/breads servings for a recipe that lists the grain ingredients in cups.

Table 6. Weights of 1 cup of commonly used grain ingredients ¹	
Food item	Weight (grams) per cup
Barley, flour or meal ²	148
Barley, hulled ²	184
Barley, pearled, uncooked ²	200
Barley, pearled, cooked ²	157
Breadcrumbs, dry, grated, plain ²	108
Breadcrumbs, plain, dry, grated, seasoned ²	120
Breadcrumbs, plain soft, white ²	45
Bulgur, uncooked ²	140
Bulgur, cooked ²	182
Cereal, General Mills Cheerios ³	28
Cereal, General Mills Corn Chex ³	31
Cereal, General Mills Rice Chex ³	27
Cereal, General Mills Wheat Chex ³	47
Cereal, General Mills Wheaties ³	36
Cereal, Kellogg's All-Bran Bran Buds ⁴	90
Cereal, Kellogg's All-Bran Original ⁴	62
Cereal, Kellogg's Corn Flakes crumbs ⁴	88
Cereal, Kellogg's Corn Flakes, whole ⁴	28
Cereal, Kellogg's Rice Krispies ⁵	26
Cereal, Quaker Puffed Rice ⁵	14
Cereal, Quaker Puffed Wheat ⁵	28
Cornmeal, enriched, uncooked, yellow, degerminated ²	157
Cornmeal, enriched, uncooked, yellow, whole grain ²	122
Cracker crumbs, graham, crushed ²	84
Cracker crumbs, snack, standard snack-type, regular, crushed ²	52
Flour, buckwheat, whole groats ²	120
Flour, corn, whole grain, yellow ²	117
Flour, rice, brown ²	158

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Table 6. Weights of 1 cup of commonly used grain ingredients ¹, continued

Food item	Weight (grams) per cup
Flour, rice, white ²	158
Flour, rye, dark ²	128
Flour, rye, light ²	102
Flour, wheat, white, all-purpose enriched, bleached ²	125
Flour, wheat, white, all-purpose enriched, unbleached ²	125
Flour, wheat, white, bread, enriched ²	137
Flour, wheat, white, cake, enriched, unsifted, dipped ²	137
Flour, wheat, white, self-rising, enriched ²	125
Flour, wheat, whole grain ²	120
Wheat germ, uncooked, plain ²	88
Wheat germ, toasted, plain ²	115
Oat bran, raw ²	94
Oat bran, cooked ²	219
Oats, rolled, quick, uncooked ²	81
Oats, rolled, regular, uncooked ²	81

¹ The use of brand-name products is solely for clarification regarding serving sizes and does not constitute approval or endorsement by the USDA or CSDE. The actual weight of 1 cup may be more or less than the weights in this chart, depending on the measuring method used, e.g., stirred or unstirred, sifted or unsifted, spooned or dipped, and coarsely or finely crushed. For the most accurate conversion of volume to weight, calculate the average weight of 1 cup of the ingredient by measuring and weighing several samples. For more information, refer to the CSDE's form, *Yield Study Form for Child Nutrition Programs*.

² USDA's FoodData Central database (Standard Reference (SR) Legacy Data):
<https://fdc.nal.usda.gov/>

³ General Mills Cereals: <https://www.generalmills.com/en/Brands/Cereals>

⁴ Kellogg's Cereals: https://www.kelloggs.com/en_US/home.html

⁵ Quaker Cereals: <https://www.quakeroats.com/products>

Calculation Methods for Grains/Breads Servings for Grades K-12 in the ASP

Table 7. Using method 2 (creditable grains) to calculate the grains/breads servings for recipes listing the volume of grain ingredients

Multi-grain bread

25 servings (one piece)		Convert cups to grams	
Grain ingredient	Measure	Grams per cup ¹	Weight (grams)
Whole-wheat flour	2 cups	X 120 =	240.00 grams
Rolled oats ³	³ / ₄ cup	X 181 =	60.75 grams
All-purpose enriched flour	2 cups	X 125 =	250.00 grams
Enriched cornmeal	¹ / ₄ cup	X 138 =	34.50 grams
Total weight of creditable grains:			585.25 grams

1. Determine the **combined weight (grams)** of all creditable grains in the recipe.

A **585.25** grams

300.75 grams of whole grains (whole-wheat flour and rolled oats) + 284.5 grams of enriched grains (all-purpose enriched flour and enriched cornmeal) = **585.25 grams** of creditable grains

2. List the **number of servings** in the recipe.

B **25** servings

3. Determine the **grams of creditable grains** per serving: Divide A by B.

C **23.41** grams

4. Determine the **grains/breads servings** per serving: Divide C by 16 (1 grains/breads serving = **14.75 grams** of creditable grains). ²

D **1.58** grains/breads servings

5. Round **down** the number in D to the **nearest ¹/₄ serving**. For example, 1.49 and 1.27 round down to 1.25, and 1.24 rounds down to 1.

E **1.5** grains/breads servings

¹ The grams per cup are from the USDA's [FoodData Central](#) database (Standard Reference (SR) Legacy Data).

² Dry cereal grains used as an ingredient in a recipe (such as rolled oats and cornmeal) credit the same as groups A-E. They require 14.75 grams of creditable grains to credit as 1 serving.

Calculation Methods for Grains/Breads Servings for Grades K-12 in the ASP

Resources

Accepting Processed Product Documentation in the NSLP and SBP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/AcceptDocumentationSNP.pdf>

Afterschool Snack Program (ASP) (CSDE webpage):

<https://portal.ct.gov/SDE/Nutrition/Afterschool-Snack-Program>

Afterschool Snack Program Handbook (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/ASP/ASPHandbook.pdf>

Afterschool Snack Program Meal Pattern for Grades K-12 (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/ASP/MealPatternASPgradesK-12.pdf>

Basics at a Glance Portion Control Poster (Institute of Child Nutrition):

<https://theicn.org/icn-resources-a-z/basics-at-a-glance/>

Comparison of Meal Pattern Requirements for the Grains/breads component in School Nutrition Programs (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/ComparisonGrainCreditingSNP.pdf>

Crediting Breakfast Cereals for Grades K-12 in the NSLP and SBP (CSDE)

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/CreditCerealsSNPgradesK-12.pdf>

Crediting Enriched Grains in the NSLP and SBP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/CreditEnrichedGrainsSNP.pdf>

Crediting Foods for Grades K-12 in the ASP (“Documents/Forms” section of the CSDE’s ASP webpage):

<https://portal.ct.gov/SDE/Nutrition/Afterschool-Snack-Program/Documents#CreditingFoodsGradesK12>

Crediting Whole Grains in the NSLP and SBP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/CreditWholeGrains.pdf>

Exhibit A: Grain Requirements for Child Nutrition Programs (USDA):

<https://foodbuyingguide.fns.usda.gov/Content/TablesFBG/ExhibitA.pdf>

Food Buying Guide Exhibit A Grains Tool (USDA):

<https://foodbuyingguide.fns.usda.gov/ExhibitATool/Index>

Food Buying Guide Section 4: Overview of Crediting Requirements for the Grains/breads component (USDA):

https://foodbuyingguide.fns.usda.gov/Content/TablesFBG/USDA_FBG_Section4_Grains.pdf

Calculation Methods for Grains/Breads Servings for Grades K-12 in the ASP

Food Buying Guide Section 4: Yield Table for Grains (USDA):

https://foodbuyingguide.fns.usda.gov/files/Reports/USDA_FBG_Section4_GrainsYieldTable.pdf

FoodData Central (USDA):

<https://fdc.nal.usda.gov/>

Grains/Breads Component for Grades K-12 in the ASP (“Documents/Forms” section of the CSDE’s ASP webpage):

<https://portal.ct.gov/SDE/Nutrition/Afterschool-Snack-Program/Documents#GrainsBreadsK12>

Grains/Breads Servings for Grades K-12 in the ASP (CSDE):

https://portal.ct.gov/-/media/SDE/Nutrition/ASP/GrainsBreadsServingsASP_gradesK-12.pdf

Menu Planning Resources for School Meals (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/MealPattern/MenuPlanResourcesSchools.pdf>

Product Formulation Statement for Documenting Grains/Breads Servings in the Child and Adult Care Food Program, Summer Food Service Program, and NSLP Afterschool Snacks (USDA):

https://fns-prod.azureedge.net/sites/default/files/resource-files/PFS_Grains-Breads_Servings_Fillable_508.pdf

Product Formulation Statement for Documenting Grains/Breads Servings in the Child and Adult Care Food Program, Summer Food Service Program, and NSLP Afterschool Snacks—Completed Sample (USDA):

https://www.fns.usda.gov/sites/default/files/resource-files/PFS_Example_Grains-Breads_Servings.pdf

Product Formulation Statements (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/PFS.pdf>

Standardized Recipe Form for School Nutrition Programs (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/StandardizedRecipeSchools.docx>

USDA Memo SP 34-2019, CACFP 15-2019 and SFSP 15-2019: Crediting Coconut, Hominy, Corn Masa, and Masa Harina in the Child Nutrition Programs:

<https://www.fns.usda.gov/cn/crediting-coconut-hominy-corn-masa-and-masa-harina-child-nutrition-programs>

Yield Study Data Form for Child Nutrition Programs (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/YieldStudy.pdf>

Calculation Methods for Grains/Breads Servings for Grades K-12 in the ASP



For more information, review the CSDE's [Afterschool Snack Program Handbook](#) and visit the CSDE's [Afterschool Snack Program](#) webpage, or contact the [school nutrition programs staff](#) in the CSDE's Bureau of Health/Nutrition, Family Services and Adult Education, 450 Columbus Boulevard, Suite 504, Hartford, CT 06103-1841.

This document is available at https://portal.ct.gov/-/media/SDE/Nutrition/ASP/GrainsBreadsCalculationASP_gradesK-12.pdf.

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- (1) mail: U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
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- (2) fax: (202) 690-7442; or
- (3) email: program.intake@usda.gov.

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